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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
VU, TUAN A	

ART UNIT	PAPER NUMBER
2193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/640,620	AVAKIAN ET AL.	
	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/11/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 7/19/07.

As indicated in Applicant's response, claims 1-4, 6-8, 11, 15-18, 20 have been amended. Claims 1-20 are pending in the office action.

Claim Objections

2. Claim 20 is objected to because of the following informalities: the phrase recited as 'to selected transaction' grammatically requires some 'indefinite article' in front of 'selected'.

3. Claims 1, 9-11, 16 are objected to because of the informality in reciting 'said correlators' (e.g. line 14, see claim 1) because this plural form is not consistent with 'a correlator' (e.g. line 11, claim 1). The 'said correlators' will be treated as a correlator of any instrumented transaction. Claims 9-11, 16 for presenting the same informality (*said correlators*) without proper antecedent support would be also objected to. Appropriate correction is required lest a indefinite language of a 35 USC § 112 type of paragraph would be applied.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie).

As per claim 1, Labadie discloses a server system method for monitoring performance of a plurality of transactions including a top level transaction and plurality of transactions relating to said top level transaction in a child parent hierarchy (e.g. Tivoli ARM ... International Business Machines - para 0005-0014, pg. 1-2; para 0036, pg. 4; *event originated; event that triggered the particular event* - para 0045-0052, pg. 4-5 – Note: ARM and Tivoli correlators reads on parent/child transaction correlators with associated measurements via API, correlation that identifying originating or triggering events/host name), comprising

for each of selected ones of said plurality of transactions, obtaining a performance (e.g. *response time* - para 0005-0014, pg. 1-2) metric corresponding to selected transaction of a plurality of parent-child transactions by:

installing an instrument hook upon loading the selected transaction (e.g. Fig. 4A-C; *event correlator ...time stamp even for inclusion of ...a correlator* - para 0061, pg. 5; Fig. 5A); and instrumenting said selected transaction upon execution of the selected transaction (Fig. 4A-C; Fig. 5A-B - Note: Middleware instrumenting of live events and transaction threads reads on live hooks onto the events between selected client and server transactions, i.e. via API invoked during loaded transactions – see para 0059, pg. 5) using one or more plug-in instruments called by the instrument hook (e.g. *plug-in* -para 0034-0035, pg. 4; Fig. 2)

for each of said instrumented transactions, generating a correlator for identifying said top level transaction and a parent transaction (e.g. para 0012-0013, pg. 2 - Note: ARM correlator reads on child/parent relationship – see para 0005, pg. 1), if any, of said instrumented transaction, and

utilizing said correlator(s) to cross-correlate a performance metric corresponding to a parent transaction with one or more performance metrics corresponding to one or more child transactions of said parent transaction (e.g. Fig. 5B; *SOAP parameters, timestamp* – para 0073, pg. 7; Fig. 6A-C - Note: ARM with correlation service reads on corresponding correlator of child and that of parent).

Labadie specifies that the server system is a EJB server with applications (para 0026, pg. 3) involving Sun Microsystems Enterprise beans; hence has disclosed that this server system is a J2EE because of the transaction-related ARM services and instrumentation on EJB Java objects (see Fig. 6A-C).

As per claim 2, Labadie discloses the step of instrumenting said transaction comprises inserting instrumentation code in a bytecode representation of said selected transaction (byte stream – para 0072, pg. 6).

As per claims 3-6, Labadie discloses wherein said performance metric corresponds to a response time of said transaction (*response time* - para 0005-0014, pg. 1-2); wherein said instrumentation code effects generation of a start time marker upon start of execution of said selected transaction and generation of a stop time marker upon completion of execution of said selected transaction (para 0068, pg. 6); wherein said instrumentation code generates calls to an Application Response Measurement (ARM) agent to cause generation of said stop and start time markers (service 350 – Fig. 5B; para 0005-0014, pg. 1-2) utilizing said start and stop time markers to measure a response time of said selected transaction (Fig. 5A, 6A).

As per claim 7, Labadie discloses generating a record for each instrumented transaction upon completion of said instrumented transaction, said record indicating said performance metric

associated with said instrumented transaction (Fig. 5A-B), a parent of said instrumented transaction, and said top level transaction (Note: for each byte stream being instrumented for a ARM code instrumentation as disclosed, the top level or correlated event being monitored reads on parent or top level transaction – see para 0045-0052, pg. 4-5).

As per claim 8, Labadie discloses transmitting said instrumented transaction record to an analysis and presentation module (e.g. *PushCorrelator, GetAllCorrelator* - Fig. 6B; *Set_Context_Data, Set_Context_Info* - Fig. 6A, B; *CorrelatorTableEntry 390* – Fig. 5B).

As per claims 9-10, Labadie discloses storing of said correlators in a thread local storage stack (e.g. Fig. 4A-C - Java Virtual Machine runtime thread with Thread counter reads on thread stack in JVM, stack being inherent to a JVM runtime as evidenced by *Push*Correlator, *Pull*Correlator – Fig. 5B) in case of execution of said hierarchical transactions in a single thread (para 0037-0045, pg. 4); and storing said correlators in the stack based on a LIFO protocol (see Fig. 4A-C - Note: Java Virtual Machine runtime stack for threads recording with inclusion of associated correlators therein at runtime, reads on LIFO protocol of a given stack).

As per claim 11, Labadie discloses removing one correlator of the instrumented transaction's correlator from said stack upon completion of a said hierarchy of transaction associated with said correlator (*PullCorrelator* – Fig. 6B – Note: parent/child transactions being monitored – see Fig. 4A-C; Fig. 6B -- reads on hierarchy being correlated with middleware invocation).

As per claim 12, Labadie discloses wherein said top-level transaction is initiated in response to a request received from a web server (e.g. Init_Correlator – Fig. 6A- Note: any partner event in the flow of threads – see Fig. 4A-C- reads on a top thread leading to other thread

downstream based on the first request and Init – see *InitClientMWare* –Fig. 6A, in light para 0034, pg. 4).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 13, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie), and further in view of Hind et al, USPN: 7,003,565 (hereinafter Hind).

As per claims 13-14, Labadie does not explicitly disclose wherein said web server transmits a cookie to said application server together with said request; and further utilizing said cookie to generate said top level correlator. But the client state being collected and passed (see Fig. 5A-B) over to different servers (plug-in middleware, DCS correlator service) using the instrumentation service (ARM) to record correlator as shown by Labadie (see para 0028-0032, 0034-0036) entail client runtime data/events to be passed from services to services to enable correlation of thread or partners being enumerated for a process request or analysis thereof(see Fig. 4A-C). The use of cookie at a given machine to store client data for repeated usage – so to obviate creation of addtitional discovery resources -- was concept used in the data collecting paradigm by Hind so that by using these record or cookie under the provision of message as to communicate with servers (see Fig. 3A; correlator – col. 8, lines 20-67) Hind's collection of

correlator-type of data can support service as to improve QoS delivery or administrative policy enforcing. Hence, in the same endeavor as analyzing performance of transaction as Labadie, Hind provides in-bound and out-bound message with cookie data so to provide very specific client data for server to enforce quality control transaction using correlation information therein (see Fig. 6) thus to alleviate dependency of information interchanges from many sources of data providers (or linked servers) as cookie messaging can yield latest state of client information. Hence, in view to the multiple agent messaging as required in Labadie's correlator record passing, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide cookie messaging by Hind, i.e. using said cookie data to implement or to support correlator data collection as purported by Labadie. One skill in the art would be motivated to do so because cookie data from one sending edge server to the next would alleviate extraneous discovery resources for these data reflect the most accurate and dynamic state of the client information being passed (see Hind, col. 16, bottom to col 17 line 34) such that by utilizing this cookie approach, the servers can make use of the most up-to-date state of a client/requesting source data to fulfill the quality of transaction as approached by Labadie's instrumentation service, or to facilitate the enforcement of transaction security as endeavored by Hind's Qos paradigm.

8. Claim 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie), and further in view of Bansal et al., USPubN: 2003/0120593 (hereinafter Bansal)

As per claim 15, Labadie discloses a method for monitoring performance of at least two Java transactions that are related to one another as parent-child transactions (re claim 1), comprising:

for each of said at least two Java transactions, obtaining a performance (e.g. *response time* - para 0005-0014, pg. 1-2) metric corresponding to selected transaction of a plurality of parent-child transactions by:

installing an instrument hook upon loading each of said at least two Java transactions (e.g. Fig. 4A-C; *event correlator ...time stamp even for inclusion of ...a correlator* - para 0061, pg. 5; Fig. 5A – Note: metric gathering calls inserted within transaction threads via plug-in and ARM service implementation with provision of dynamic OO class and methods read on hooking 2 selected Java transactions within the control of the DCS system); and

instrumenting each of said at least two Java transactions transaction upon execution of each of said at least two Java transactions (Fig. 4A-C; Fig. 5A-B - Note: Middleware instrumenting of live events and transaction threads reads on live hooks onto the events between selected client and server transactions, i.e. via API invoked during loaded transactions – see para 0059, pg. 5) using one or more plug-in instruments called by the instrument hook (e.g. *plug-in* - para 0034-0035, pg. 4; Fig. 2)

generating a correlator (para 0012-0013, pg. 2) corresponding to said parent transaction (re claim 1) and another correlator corresponding to said child transaction (e.g. Fig. 5B; *SOAP parameters, timestamp* – para 0073, pg. 7; Fig. 6A-C - Note: ARM with correlation service reads on corresponding correlator of child and that of parent).

Labadie discloses utilizing RMI (see ORB, para 0028, pg. 3) to send said top-level correlator incorporated in a header of an IIOP message to said child transaction, and generator another correlator corresponding to said child transaction (Fig. 5A-B; *header* - para 0064-0066, pg. 6); but does not explicitly teach RMI over IIOP. The use of message over IIOP in a J2EE based network is taught by Bansal (Fig. 23) who also teaches using of ARM to instrument and measure application data for performance reporting (see para 0922-0969, pg. 38-40). Since Labadie is also suggesting performance analysis in a similar context where message containing correlator data are passed in a interoperability Enterprise Java network (para 0026, pg. 3), it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a layer of IIOP as in Bansal's message passing above among the ORB layer pertinent to this J2EE paradigm in order for Labadie's RMI invocation (over ORB) or correlator record passing to benefit of the core service of the ORB based on IIOP as heterogeneous format data can be reconverted from one format into another to fulfill the path of the data being transferred in this enterprise communications means.

As per claims 16-19, these claims include the subject matter of claims 3-5 or 6; hence will incorporate the corresponding rejection as set forth therein, respectively.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aman et al., USPubN: 2004/0220947 (hereinafter Aman) further in view of Labadie et al, USPubN: 2003/0195959 (hereinafter Labadie)

As per claim 20, Aman discloses computer-readable medium instructions operable by a computer, which when executed cause the computer to perform a method comprising:

obtaining a performance metric corresponding to selected transaction of a plurality of parent-child transactions by: installing an instrument hook upon loading the selected transaction (Fig. 4 – Note: dynamic insertion of API call invoked by the business Application – i.e. runtime - via ARM services reads on instrumentation hooks installed at loading of transaction – see Fig. 12; see *Open Group ... invoked by the application 404 to provide the instrumentation* - para 0067, pg. 4; see *interface ... Java programming language ... instrumentation ... Java applications ... Java environment* – para 0099-0102, pg. 6; *ARM API ... correlator is a byte* – para 0175-0176, pg. 10 – Note: byte code to implement a correlator invoked via a ARM API in Java reads on a selected transaction at runtime); and

instrumenting said selected transaction upon execution of the selected transaction (para 0067, pg. 4); and

generating correlators for each of said transactions (e.g. *correlator* -Fig. 26; para 0135-0136, pg. 8), wherein each correlator identifies said top level transaction and a parent transaction, if any, corresponding to its associated transaction (e.g. Fig. 26; para 0021-0024, pg. 2).

Aman does not disclose instrumenting using one or more plug-in instruments called by the instrument hook. Labadie in a similar runtime hooking of instrumentation invocations to obtain transaction metrics, disclose plug-in incorporated in DCS hooking service or middleware API (see Labadie: Fig. 2; plug-in -para 0034-0035, pg. 4). Based on the similar framework by which correlators are generated by both Aman and Labadie in a context where HTTP based transactions via runtime API can be dynamically instrumented as taught by Aman (see *HTTP, arm_start_transaction()* - para 0111 to para 0123, pg. 7) it would have been obvious for one skill

in the art at the time the invention was made to provide pluggable middleware as by Labadie to implement Aman's HTTP based invocation of instrumentation API because by providing a middleware pluggable module to such invocation, resources needed to implement the interface in a browser runtime whereby a loaded transaction are to be monitored would be obviated thereby expediting the measurement process as endeavored by both Aman and Labadie.

Response to Arguments

10. Applicant's arguments filed 7/19/07 have been fully considered but they are not persuasive. Following are the Examiner's observation in regard thereto.

35 USC § 102 Rejection using Labadie:

(A) Applicants have submitted that Labadie's thread and time line instrumentation does not disclose installing an instrument hook upon loading the selected transaction (Appl. Rmrks pg. 9, top). Instrumenting hook as interpreted in the context of loading an application amounts to a runtime process by which some instrumentation instructions are invoked via some dynamically created interfaces into the memory environment of such runtime; and it would not be given more that it has been interpreted. Selected transactions amount to 2 pair of transaction for which code invocation for instrumenting the events (or invoking performance-measuring executable object) related to such pair in the context of parent/child as contemplated by the ARM services. Thus, Labadie, in view of the services to provide a ARM using plug-in middleware to create correlator structures and intrinsic OO classes and their methods to provide metrics relative to threads of 2 transactions as set forth in the Rejection, is deemed as sufficient to fulfill the required features (hooking at loading time, selected transactions) as analyzed above. That is, selecting 2 pair of transactions by way of the correlator service provided within a DCS network service, thereby

dynamically inserting sufficient OO instrumentation methods provided from an invoked runtime plug-in service (see Fig. A-C); invoking these performance-measuring methods to yield correlating information by means of such instrumentation plug-in/API hooks inserted among the selected transactions thread instances. Labadie at least has fulfilled hooking of two selected transactions with instrument code to create correlator(s) for each of said transaction. The argument is not sufficient to overcome the rejection.

USC § 102 Rejection using Aman:

(B) The argument (Appl. Rmrks pg. 9, bottom half) becomes moot in view of the new grounds of rejection necessitated by the amendments.

USC § 103 Rejection:

(C) Applicants have submitted that claim 15 emphasis added on 'installing an instrument hook' and 'plug-in instruments called by the instrument hook' have not been fulfilled for the same reasons as the observations made in claim 1 (Appl. Rmrks pg. 10, middle). For the same reasons claim 1 point of discussion have been addressed, the 2 features are deemed fulfilled using broad interpretation and reasonable similar approach by Labadie to fulfill the above 2 limitations. That is, Labadie's way of providing hook (in light of the claim language being interpreted) is perceived as inserting some dynamic constructs (see Rejection, and section A above) into the runtime memory to switch the runtime into some instrumentation calls. The language used in the claim in regard to 'hook' lacks specific details in order to convincingly preclude the teachings by Labadie's DCS provided combined plug-in/ARM services with their correlator OO class and methods from fulfilling the so-recited 'instrument hook' feature. Why it would have been obvious in using IIOP and RMI has been the crux of the rejection; and

Applicants contend with not addressing this aspect of the rejection, when the rejection does combine both Labadie and Bansal's teachings for a very specific feature deemed obvious. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In whole, including the dependency of claims 13-14 to the base claim's discussion, the claims as submitted will stand rejected as set forth in the Office Action.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu
Patent Examiner,
Art Unit 2193
September 22, 2007